



Christleton Primary School

Maths

Year 3 – Mathematics Intent

Year 3 Maths Long Term Plan

Year 3 Maths Long Term Plan			
Autumn	Number and Place Value (5 weeks)	Addition and Subtraction (8 weeks)	
Spring 3x week	Multiplication and Division (10 weeks)		Fractions and Decimals (2 weeks)
2x week	Statistics (2.5 weeks)	Geometry (6 weeks)	Money (3.5 weeks)
Summer 3x week	Fractions and Decimals (10 weeks)		Measure—length and perimeter (2 weeks)
2x week	Measure—Time (6 weeks)	Measure—Mass and Capacity (4 weeks)	

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Block 1			
Number and Place Value			
Substantive Knowledge	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
National Curriculum			
Count from 0 in multiples of 50 and 100; find 10 or 100 more or less than a given number NB – counting in multiples of 4 and 8 have been moved to multiplication unit		<ul style="list-style-type: none"> • Can count in multiples of 50 and 100 and use doubling to explain the relationship between them • Can find 10 more or less than a given number and explain which digit changes and which stays the same • Can find 100 more or less than a given number and explain which digit changes and which stays the same 	*Introduction to resources *Count in 100s – Ensure the link to counting in 10s *Value of digits with a range of representations
Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	3NPV-2 Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.	<ul style="list-style-type: none"> • Can identify the number of hundreds, tens and ones in a 3-digit number • Can identify the larger of two 3-digit numbers and explain reasoning 	*Systematic problem solving – making a range of 3-digit numbers with 3-digit cards
Compare and order numbers up to 1000	3NPV-3 Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10 3NPV-4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	<ul style="list-style-type: none"> • Can position 3-digit numbers on a number line and explain reasoning about where they are positioned 	*Partitioning in non-standard ways 1, 10, 100 more or less *Counting in 50s *Comparing objects using a range of representations
Identify, represent and estimate numbers using	3NPV-1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10;	<ul style="list-style-type: none"> • Can use representations such as dienes, place value counters and money to represent 3-digit numbers 	

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different representations	apply this to identify and work out how many 10s there are in other three-digit multiples of 10.		*Comparing and ordering 2 numbers
Read and write numbers up to 1000 in numerals and in words		<ul style="list-style-type: none"> • Can use understanding of numbers 1 – 100 to read and write numbers to 1000 	*Comparing and ordering numbers on a number line
Solve number problems and practical problems involving these ideas.		<ul style="list-style-type: none"> • Can solve problems involving number and link to areas such as money and measure 	*Comparing and ordering a range of numbers *Application to substantial problems

Block 2

Addition and Subtraction

Substantive Knowledge National Curriculum	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
Add and subtract numbers mentally, including <ul style="list-style-type: none"> - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds 	<p>3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.</p> <p>NF–3 Apply place-value knowledge to known additive and multiplicative number facts</p> <p>AS–1 Calculate complements to 100</p> <p>AS–3 Manipulate the additive relationship: Understand the inverse relationship between</p>	<ul style="list-style-type: none"> • Can add and subtract numbers using place value and partitioning, including counting on and back on a number line • Can add and subtract multiples of 10 and compensate • Can count on to find the difference between two numbers 	*Consolidate number facts from KS1 *Related number facts with no bridging *Missing box and inverses with no bridging *Add a 3-digit number and ones mentally using bridging *Subtract a 3-digit number and ones mentally using bridging

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	addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.		*Add a 3-digit number and tens mentally using bridging and extending to compensating *Subtract a 3-digit number and tens mentally using bridging and extending to compensating
Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	AS-2 Add and subtract up to three-digit numbers using columnar methods AS-3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.	<ul style="list-style-type: none"> • Can calculate using a formal written method for TU+TU, no bridging and with bridging • Can calculate using a formal written method for HTU+TU, no bridging and with bridging • Can calculate using a formal written method for HTU+HTU, no bridging and with bridging • Can calculate using a formal written method for TU-TU, no bridging and with bridging • Can calculate using a formal written method for HTU-TU, no bridging and with bridging • Calculate using a formal written method for HTU-HTU, no bridging and with bridging. 	*Adding and subtracting a 3-digit number and hundreds mentally *Estimation *Finding the difference *Problem solving with mental calculations *Written addition *Written subtraction *Deciding on most appropriate method *Problem solving and consolidation.
Estimate the answer to a calculation and use inverse operations to check answers	AS-3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.	<ul style="list-style-type: none"> • Round numbers to estimate answers to a problem • Understand how to use the inverse to check answers to a calculation 	
Solve problems, including missing number problems,	AS-3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the	<ul style="list-style-type: none"> • Identify the correct information to solve a problem 	

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using number facts, place value, and more complex addition and subtraction.	part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.	<ul style="list-style-type: none"> Find missing box calculations in mental addition Check solutions and results to see whether they are reasonable 	
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Block 3			
Statistics			
Substantive Knowledge National Curriculum	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
Interpret and present data using bar charts, pictograms and tables	No specific Ready to Progress statements for Statistics but use the opportunity to consolidate prior statements as appropriate e.g. 3NPV-3 Reason about the location of any three-digit number in the linear number system and 3NPV-4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. 3NF-1 Secure fluency in addition and subtraction	<ul style="list-style-type: none"> Can interpret data from a pictogram when one symbol represents more than one unit Can interpret data in graphs and understand varying scales of multiples of 2, 5 and 10 when reading values presented in bar charts Can create a tally chart and understand that grouping in 5s helps with the accuracy and speed of counting the totals Can transfer data from a tally chart to a table Can create a bar chart to represent data 	Create tally chart and link to counting in 5s Transfer data from a tally chart to a table Pictograms when one symbol represents more than one unit Bar charts Interpret data from graphs and understand varying scales of multiples of 2, 5 and 10 when reading scales Solve one-step and two-step questions using information
Solve one-step and two-step questions [for example, 'how many more?' and 'how many fewer?'] using information presented in		<ul style="list-style-type: none"> Can answer questions from a bar chart that involve comparison, sum and difference Can answer questions from a pictogram that involve comparison, sum and difference 	

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scaled bar charts and pictograms and tables	facts that bridge 10, through continued practice.	<ul style="list-style-type: none"> Can answer questions from a table that involve comparison, sum and difference 	presented in scaled bar charts and pictograms and tables
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Block 4			
Multiplication and Division			
Substantive Knowledge National Curriculum	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
Count from 0 in multiples of 4, 8	3NF–2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	<ul style="list-style-type: none"> Can count in multiples of 4 and 8 and use doubling to explain the relationship between them Can find 100 more or less than a given number and explain which digit changes and which stays the same 	Recap 2x, 5x, 10x tables Commutativity 4x tables
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables		<ul style="list-style-type: none"> Can recall the 3x table Can recall the 4x table Can recall the 8x table Can use doubling to explain the relationship between the 2, 4 and 8 times tables Can derive related division facts Can understand that division cannot be done in any order 	8x tables 3x tables Links and the development of multiplication Arrays and the links to division
Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental		<ul style="list-style-type: none"> Can use multiplication facts to solve TU x U using partitioning Can use multiplication facts to solve TU x U using the grid method Can begin to use multiplication facts to solve TU x U using a formal written method Can use derived facts to solve problems involving division <i>e.g.</i> <i>Flowers are grown in rows of 10. There are 73 flowers. How many full rows can be planted?</i> 	Extending related facts Scaling How many ways Consolidation of mental strategies and problem solving

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and progressing to formal written methods		<ul style="list-style-type: none"> • Can use mental methods to divide TU by U <i>e.g. For $42 \div 3$, partition and calculate $30 \div 3$ and $12 \div 3$ then recombine</i> • Can begin to use a formal written method to divide TU by U 	Written multiplication 2-digit by 1-digit Written division 2-digit by 1-digit
Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	MD–1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotative and partitive division.	<ul style="list-style-type: none"> • Can solve missing box calculations relating to recall of multiplication and division facts • Can solve problems linked to scaling measures <i>e.g. 4 times as high</i> • Can solve correspondence problems such as <i>3 tops, 4 football shorts, how many different outfits can be made?</i> • Can solve division problems <i>e.g. 12 sweets between 3 children or 4 cakes between 8 children</i> 	Consolidation and problem solving

Block 5

Measure – Length and Perimeter

Substantive Knowledge National Curriculum	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
Measure, compare, add and subtract: lengths (m/cm/mm);	No specific Ready to Progress statements for Length and Perimeter but use the opportunity to consolidate prior statements as appropriate e.g. 3NPV–3 Reason about the location of any three-digit number in the linear number system and 3NPV–4 Divide 100 into 2, 4, 5	<ul style="list-style-type: none"> • Can show something that they think is just shorter/longer than a metre/ centimetre/millimetre and can check if they are right using correct apparatus • Can measure accurately in m/cm/mm; • Can compare measures using the appropriate scale • Can read scales accurately and say what each division is worth 	Consider links to PE/Sports Day, Olympics/Commonwealth Games Length Explore tools for measuring length

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	and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. 3NF-1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.	<ul style="list-style-type: none"> • Can add and subtract measures • Can compare and use mixed units <i>e.g. 1m and 20cm</i> • Can work out equivalents in all areas of measure <i>e.g. 5m = 500cm</i> • Can complete simple scaling by integers (e.g. a given quantity or measure is twice as long or five times as high) and connects this to multiplication. 	<p>Explore vocab for measuring length</p> <p>Model units of length</p> <p>Read scales</p> <p>Measure in metres</p> <p>Measure in mm/cm</p> <p>Work out equivalent lengths</p> <p>Order and compare lengths using conversion</p> <p>Addition and subtraction problems linked to length.</p> <p>Multiplication and division problems linked to length.</p> <p>Perimeter</p> <p>Measure perimeter</p> <p>Find perimeters using addition and multiplication knowledge.</p>
Measure the perimeter of simple 2-D shapes		<ul style="list-style-type: none"> • Can measure the sides of regular polygons in centimetres and millimetres and find their perimeters in centimetres and millimetres 	

Block 6

Fractions and Decimals

Substantive Knowledge	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
National Curriculum			
Count up and down in tenths; recognise that tenths arise		<ul style="list-style-type: none"> • Understands tenths are dividing an object or a number into ten equal parts. 	

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from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10		<ul style="list-style-type: none"> • Understands tenths are 10 parts of one whole. • Can find and place tenths on a number line. • Can use tenths in money and metres • Can compare and order numbers to 1dp 	<p>Introduction/recap on Fractions using Fraction strips</p> <p>Unit fractions</p> <p>Non-unit fractions</p>
Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	<p>3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.</p> <p>3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency).</p>	<ul style="list-style-type: none"> • Understand the numerator and denominator in a proper fraction. • Can calculate unit fractions by dividing. • Can compare unit fractions on a number line. • Can calculate non unit fractions by dividing. 	<p>Making a whole</p> <p>Making a half</p> <p>Placing fractions on a number line (ordering fractions while exploring equivalents)</p> <p>Equivalent fractions</p>
Recognise and show, using diagrams, equivalent fractions with small denominators		<ul style="list-style-type: none"> • Can recognise that one whole is equivalent to two halves, three thirds, four quarters • Can work out equivalent fractions using diagrams. 	<p>Ordering and comparing fractions</p> <p>Placing tenths on a number line – link to decimal representation</p>
Add and subtract fractions with the same denominator within one whole	3F–4 Add and subtract fractions with the same denominator, within 1.	<ul style="list-style-type: none"> • Can identify fractions that will total 1 • Can add fractions with the same denominator up to 1. • Can convert fractions to have common denominators. 	<p>Fraction of an amount</p> <p>Addition of Fractions</p> <p>Subtraction of Fractions</p>
Compare and order unit fractions, and fractions with the same denominators	3F–3 Reason about the location of any fraction within 1 in the linear number system.	<ul style="list-style-type: none"> • Can compare and order fractions with the same denominator. • Can use equivalent fractions to compare and order fractions that are not the same denominator. 	
Solve problems that involve all of the above.		<ul style="list-style-type: none"> • Can solve problems that involve all elements of the Year 3 fraction curriculum. 	

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Block 7			
Money			
Substantive Knowledge National Curriculum	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
Add and subtract amounts of money to give change, using both £ and p in practical contexts	No specific Ready to Progress statements for Money but use the opportunity to consolidate prior statements as appropriate e.g. AS-1 Calculate complements to 100 when finding change from £1 and 3NF-2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2 times tables when finding the totals of amounts.	<ul style="list-style-type: none"> • Can record using £ and p • Can add and subtract amounts of money • Can add and subtract mixed units • Can give change • Can solve multiplication problems • Can solve division problems 	Recognising coins Making amounts Find the total of two amounts Subtraction of amounts of money Find the difference between two amounts Giving change Solve multiplication problems Solve division problems Consolidation and problem solving

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Block 8			
Measure – Time			
Substantive Knowledge	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
National Curriculum			
Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks		<ul style="list-style-type: none"> • Can read times in analogue format to the minute • Can read times in digital format to the minute • Can read clocks displayed using Roman numerals to the minute 	<p>Recap telling the time to the nearest 5 mins</p> <p>Analogue time to the minute</p> <p>Digital time format to the minute</p> <p>Show link to Roman Numerals on a clock</p> <p>Use a time line to show morning and afternoon, link to am/pm and then 24 hour time</p>
Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight		<ul style="list-style-type: none"> • Can estimate how long something should take to complete • Can use vocabulary accurately: seconds, minutes, hours, o'clock, am/pm, morning, afternoon, noon and midnight • Can solve routine problems involving time using a time line 	<p>Include the vocabulary of noon and midnight</p> <p>Match a range of clocks</p> <p>Estimate the time taken for activities in seconds – convert to minutes.</p> <p>Repeat for minutes to hours</p> <p>Days in each month, year and leap year</p> <p>A - Duration when given start and end</p> <p>B - End when given start and duration</p> <p>C - Start when given end and duration</p> <p>Range of duration problems – identify whether the problem is type A, B or C and solve using an efficient method</p> <p>Application to substantial problems</p>
Know the number of seconds in a minute and the number of days in each month, year and leap year		<ul style="list-style-type: none"> • Can say how many seconds there are in a minute • Can say how many days there are in a month • Can say how many days there are in a year (including leap years) 	

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<p>Compare durations of events [for example to calculate the time taken by particular events or tasks].</p>		<ul style="list-style-type: none"> • Can identify the finish time of an event when given the start and the duration • Can work out the difference between the start and finish time of an event. • Can work out the start time if given the duration and end timings of an event. 	
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Block 9			
Measure – Mass and Capacity			
Substantive Knowledge National Curriculum	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
<p>Measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml)</p>	<p>No specific Ready to Progress statements for Mass and Capacity but use the opportunity to consolidate prior statements as appropriate e.g. 3NPV-3 Reason about the location of any three-digit number in the linear number system and 3NPV-4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. 3NF-1 Secure</p>	<ul style="list-style-type: none"> • Can say which object in the classroom is heavier than 100 g/kilogram/half-kilogram and know how to check if they are correct. • Can measure accurately in kg/g; l/ml • Can compare measures using the appropriate scale • Can read scales accurately and say what each division is worth • Can add and subtract measures 	<p>Mass</p> <p>Explore tools for measuring mass Explore vocab for measuring mass Model units of mass Read scales Measure in g/kg Work out equivalent weights Order and compare measurements using conversion Addition and subtraction problems linked to mass. Multiplication and division problems linked to mass.</p> <p>Capacity</p> <p>Explore tools for measuring capacity</p>

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	<p>fluency in addition and subtraction facts that bridge 10, through continued practice.</p>	<ul style="list-style-type: none"> • Can compare and use mixed units <i>e.g. 1kg and 200g</i> • Can work out equivalents in all areas of measure <i>e.g. 1 litre = 1000ml</i> • Can complete simple scaling by integers (e.g. a given quantity or measure is twice as much or 3 times the amount of flour) and connects this to multiplication. 	<p>Explore vocab for measuring capacity Model units of capacity Find a container that holds more and less than a litre Read scales Measure in l/ml Work out equivalent volumes Order and compare measurements using conversion Addition and subtraction problems linked to capacity. Multiplication and division problems linked to capacity.</p>
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Block 10

Geometry

Substantive Knowledge National Curriculum	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
<p>Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</p>	<p>G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.</p>	<ul style="list-style-type: none"> • Can describe the properties of 2D shapes, including semi-circles, using accurate language about lengths of lines and numbers of vertices • Can recognise shapes with equal side lengths • Can recognise lines of symmetry in 2D shapes • Can sort and classify collections of 2D shapes in different ways using a range of properties • Can use Venn and Carroll diagrams to classify 2D shapes • Can draw 2D shapes with the aid of modelling equipment such as geometric paper, geo boards and geo strips 	<p>2D shape introduction Angles in shapes Triangles Quadrilaterals Regular/Irregular Symmetry 3D Shapes Recognise 3D shapes in different orientations</p>

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		<ul style="list-style-type: none"> • Can describe the properties of 3D shapes, including hemispheres and prisms, using language such as base, face, vertex and edge • Can recognise and name 3D shapes viewed from different angles • Can recognise and name unseen 3D shapes in a feely bag • Can construct 3D shapes using matchsticks and plasticine 	Angles as a description of turn Horizontal and vertical lines Consolidation and problem solving
Recognise angles as a property of shape or a description of a turn	G-1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.	<ul style="list-style-type: none"> • Can recognise that angles are the amount of turn between two lines • Can describe properties of shapes in terms of the angles formed at vertices 	
Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle		<ul style="list-style-type: none"> • Can identify right angles as 90° • Can recognise that two right angles make a half turn or 180° • Can recognise that three right angles make a three quarter turn or 270° • Can recognise that four right angles make a half turn or 360° • Can use the terms acute and obtuse to describe angles less or greater than a right angle 	
Identify horizontal and vertical lines and pairs of perpendicular and parallel lines	G-2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.	<ul style="list-style-type: none"> • Can identify horizontal and vertical lines • Can identify pairs of parallel lines within shapes and around them • Can identify pairs of perpendicular lines within shapes and around them 	